

Targeting Alcohol Misuse

A Promising Strategy for Reducing Military Sexual Assaults?

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Key findings

- Between 2006 and 2012, sexual assaults among U.S. service members did not decline despite the implementation of prevention programs across the U.S. Department of Defense.
- Alcohol misuse is common in the military: One-third of active-duty service members report binge drinking, a rate that compares unfavorably with that of their civilian counterparts.
- Research has linked alcohol misuse to sexual aggression and heightened vulnerability to sexual assault.
- Efforts that have targeted alcohol misuse in other populations may contribute to a military sexual assault prevention strategy. The most extensive body of research on the connection between alcohol misuse and sexual assault comes from studies of college students, a group that shares some similarities with junior enlisted military personnel.

SUMMARY ■ Since 2005, with the support of the armed services, the U.S. Department of Defense (DoD) Sexual Assault Prevention and Response Office (SAPRO) has worked to prevent sexual assault in the U.S. military and to improve programs to respond to the needs of sexual assault victims. Unfortunately, despite these and other efforts, the rate of sexual assault in the military has not declined over the past decade. Further study of the epidemiology of sexual assault, the implementation and evaluation of innovative prevention approaches, and continued policy and fiscal support will be crucial to addressing military sexual assault. Alcohol misuse, which ranges from risky drinking to alcohol dependence (Saitz, 2005), has also been a high-priority area, with growing concern about alcohol-related incidents involving military personnel (e.g., motor vehicle accidents, suicides). DoD may be well served by an examination of the link between alcohol and sexual violence among service members, and, where appropriate, consideration of policies to reduce alcohol misuse as a part of a strategy to prevent sexual assaults as well as a broader strategy to address alcohol use problems.

This report relies on research on the role of alcohol in the processes that lead to sexual assault perpetration and risk of victimization in order to evaluate the extent to which alcohol misuse may be a viable target by which to reduce the rate of sexual assault.

Sexual Assault and Alcohol Misuse Are Ongoing Problems in the U.S. Military

In 2012, a confidential survey of 22,792 service members showed that an estimated 23 percent of female and 4 percent of male service members had been sexually assaulted during their military service (Rock, 2013). In a separate national study, the Centers for Disease Control and Prevention reported that the risk of sexual assault among service women is similar to the risk faced by civilian women (Black and Merrick, 2013). Among service members who reported being sexually

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assaulted in the previous year (6.1 percent of women and 1.2 percent of men), nearly half of the women and one-fifth of the men indicated that either they or the perpetrator had been using alcohol prior to the assault (Rock, 2013). Moreover, alcohol misuse is common among military service members. In response to the DoD Health Related Behaviors Survey, one-third of active-duty service members reported binge drinking—defined as consuming five or more drinks for men and four or more drinks for women within two hours or on the same occasion (NIAAA, 2004)—at least one time per month, and 20 percent reported binge drinking at least weekly (Barlas et al., 2013; Bray et al., 2009). Among young service members, the proportion reporting weekly binge drinking was even higher (26 percent). This rate compares unfavorably with that of their civilian counterparts, 16 percent of whom reported binge drinking on a weekly basis (Bray et al., 2009).¹

Alcohol Misuse Has Been Linked to Sexual Assault Perpetration

Understanding the role that alcohol plays in sexual assault perpetration may help guide prevention and intervention efforts. Evidence from controlled laboratory studies shows that alcohol use and intoxication are causally linked to increased general aggression in young men—particularly among men who are predisposed to behaving aggressively (Bushman and Cooper, 1990; Chermack and Giancola, 1997; Ito, Miller, and Pollock, 1996). Although sexual violence cannot be studied directly in the laboratory for ethical reasons, indirect evidence suggests that alcohol use increases the risk of committing a sexual assault. Young men who consume alcohol in a controlled laboratory setting are more likely to misperceive the sexual intent of women depicted in study materials (Farris et al., 2008), take longer than men who have not consumed alcohol to identify that a sexual encounter in an audio track has turned into a date rape (Gross et al., 2001; Marx, Gross, and Adams, 1999), and are more likely to indicate that they would sexually assault someone in a situation similar to a hypothetical date rape scenario (Davis, 2010; Davis et al., 2012; Norris et al., 2002). Most of this research has been conducted with heterosexual college men. Although they share some demographic characteristics with junior enlisted personnel, the extent to which the findings can be generalized to a military population is unknown.

Alcohol Misuse Can Heighten Vulnerability to Sexual Assault

It is important to recognize that a victim's alcohol use cannot cause a sexual assault; victimization always occurs as the result of someone else's actions. However, alcohol use can increase vulnerability if it occurs in a setting with a nearby potential perpetrator. When this condition is met, alcohol use may increase vulnerability to that potential perpetrator via a variety of mechanisms. At high doses of alcohol, users may be incapacitated or even unconscious and thus may have few means by which to resist or avoid an assault (McCauley et al., 2009; Mohler-Kuo et al., 2004). At lower doses, alcohol use may reduce attention to risk indicators (Davis et al., 2009; Testa, Livingston, and Collins, 2000), thereby decreasing the likelihood that the user will exit a risky encounter while escape is still possible. Finally, individuals observing someone drinking alcohol attribute more sexual intentions to that person than they do to someone who is not drinking alcohol, and this social misperception increases the risk of offending (Corcoran and Thomas, 1991; DeSouza et al., 1992; Garcia and Kushnir, 1987; George, Gournic, and McAfee, 1988). Note that these findings from the civilian literature focus on female victims. It would be unwise to use findings about civilian women's risk of sexual assault victimization to make inferences about military men's risk of victimization. Generalizing to military women may be more appropriate because alcohol use in social settings could be similar for both groups of women, but unique features of the military system must always be considered.

Efforts That Target Alcohol Misuse May Contribute to a Military Sexual Assault Prevention Strategy

The clear link between alcohol misuse and the risk of both sexual assault perpetration and victimization suggests that efforts to reduce alcohol misuse could contribute to a strategy for reducing the incidence of sexual assault. However, little research to date has explored such approaches. In one exception, a team of researchers showed that a parent-based intervention designed to reduce drinking among young women during their first year of college not only reduced their rates of alcohol misuse, but it also cut their risk for incapacitated rape during their first semester from 12 percent to 8 percent (Testa et al., 2010).

There are effective interventions for reducing alcohol misuse and alcohol-related problems among young adults (Jonas et al., 2012). For example, screening for alcohol misuse followed by brief behavioral counseling for patients who screen positive is effective in reducing the number of drinks consumed per week (3.6 fewer drinks on average) and heavy drinking episodes among adults (12 percent of adults reported consuming fewer drinks). Screening also has demonstrated effectiveness specifically among young adults and college populations (Jonas et al., 2012). These approaches present an opportunity to reduce alcohol-related problems while also offering the potential to prevent sexual assaults.

Based on our analysis, we recommend several avenues for additional research and intervention development that would provide the necessary information to best direct DoD's sexual assault prevention strategy as it relates to alcohol misuse:

- Determine the characteristics of alcohol-involved military sexual assaults and the role that alcohol plays in military sexual assault perpetration and victimization.
- Increase routine screening for alcohol use problems among service members, and implement evidence-based brief (five- to 15-minute) interventions to reduce problem drinking. Brief interventions include personalized feedback about drinking, discussion of goals, and advice to drink less or to abstain.
- Develop and evaluate interventions that target alcohol misuse as a strategy by which to prevent military sexual assaults.

In public remarks, Secretary of Defense Chuck Hagel has called military sexual assault “a stain on the honor of our men and women who honorably serve our country, as well as a threat to the discipline and the cohesion of our force.” DoD has invested considerable effort and resources to reduce the incidence of military sexual assault, but as with any large undertaking, there is more to be done. SAPRO has implemented a variety of DoD-wide sexual assault prevention programs, many of which include content on the link between alcohol use and sexual assault. In addition to continued efforts to evaluate these direct sexual assault prevention programs, we recommend that DoD invest in research on alcohol misuse prevention programming as a strategy by which to also prevent military sexual assaults.

Sexual assault: “Intentional sexual contact characterized by use of force, threats, intimidation, or abuse of authority or when the victim does not or cannot consent. Sexual assault includes rape, forcible sodomy (oral or anal sex), and other unwanted sexual contact that is aggravated, abusive, or wrongful (including unwanted and inappropriate sexual contact), or attempts to commit these acts” (DoD Directive 6495.01).*

Military sexual assault: Sexual assault of a military service member.

* The policy definition of sexual assault in DoD Directive 6495.01 includes rape, sexual assault, aggravated sexual contact, and abusive sexual contact, as defined by Article 120 of the Uniform Code of Military Justice.

Both sexual assault and alcohol misuse are high-priority areas for the U.S. military.

PREVENTING SEXUAL ASSAULT BY TARGETING ALCOHOL MISUSE

Despite efforts implemented by the U.S. Department of Defense (DoD) through its Sexual Assault Prevention and Response Office (SAPRO) over the past decade, the rate of sexual assault in the U.S. military has not declined. Further study of the epidemiology of sexual assault, the implementation and evaluation of innovative prevention approaches, and continued policy and fiscal support will be crucial to addressing this problem (Farris, Schell, and Tanielian, 2013). Alcohol misuse, ranging from risky drinking to alcohol dependence (Saitz, 2005), has also been a high-priority area for the military, with growing concern about alcohol-related incidents involving military personnel (e.g., motor vehicle accidents, suicides). It may benefit DoD to examine the link between alcohol and sexual violence among service members and, where appropriate, consider policies to reduce alcohol misuse as a strategy by which to prevent sexual assaults.

This report provides a brief review of research on the co-occurrence of alcohol use and sexual assault in both civilian and military populations. To evaluate the likelihood that alcohol misuse may be a viable target by which to reduce the rate of sexual assault, we review studies focused on identifying the potential causal role of alcohol use in the processes leading to sexual assault perpetration and in increasing the risk of victimization. We then highlight promising alcohol misuse prevention strategies and their potential relevance in a DoD context. Finally, we identify high-priority directions for future research.

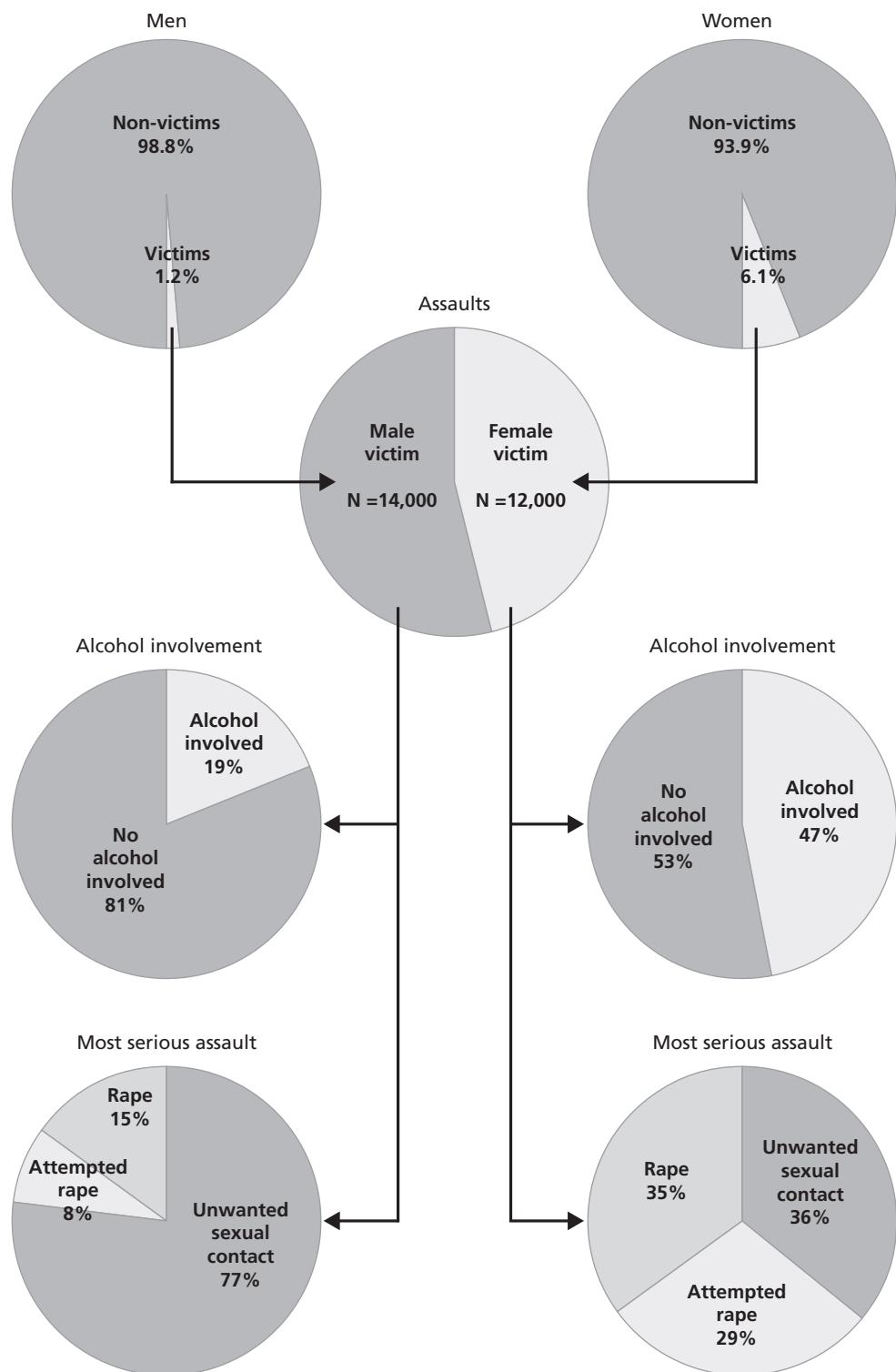
In the aftermath of an assault, alcohol misuse may play a role in the likelihood of reporting, the development of mental health sequelae, and the likelihood of accessing care. Although important, these interactions between alcohol use and sexual assault were not within the scope of this study. Rather, this report focuses on the role of alcohol misuse in the processes that lead to sexual violence.

SEXUAL ASSAULT IN THE MILITARY

The most comprehensive and regularly updated data on military sexual assault is the biennial Workplace and Gender Relations Survey on Active Duty Service Members (WGRA; Rock, 2013). The survey's results are also reported in SAPRO's annual report (SAPRO, 2013a). Figure 1 presents key findings from the fiscal year (FY) 2012 fielding of this survey, including the estimated incidence of sexual assault by gender, whether or not alcohol was involved, and the type of assault. Using a weighted sample of active-duty service members, it was estimated that 23 percent of female and 4 percent of male service members are sexually assaulted during their military service (Rock, 2013). In the 12 months prior to the survey, 6.1 percent of female service members and 1.2 percent of male service members indicated on the survey that they had been sexually assaulted (Rock, 2013). Accounting for the size of the force, these probabilities correspond to an estimated 26,000 sexual assaults in 2012—an increase from an estimated 19,000 in 2010 (Rock et al., 2011; SAPRO, 2013b). Note that the WGRA is administered by DoD and is not anonymous, which may bias the reporting of stigmatizing events downward. In addition, the estimates may be skewed by response bias, though the direction is unknown. If service members who have experienced a sexual assault are more likely to decline to participate in the survey, then estimates will be biased downward. However, if victims are eager to take the opportunity to document their experience, and are therefore more likely to participate than non-victims, estimates could be biased upward.

Compared with male military sexual assault victims, women who indicated that they had been sexually assaulted in the previous year were more likely to report that either they or the perpetrator had been using alcohol (Rock, 2013). Among women who self-reported at least one assault in the previous year, approximately equal numbers reported that the most serious incident was rape, attempted rape, or unwanted sexual contact (Rock, 2013).² Among men who reported at least one assault in the previous year, the most serious assault

Figure 1. Military Sexual Assaults and Alcohol Involvement Reported on the DoD Workplace and Gender Relations Survey, Fiscal Year 2012



SOURCE: Rock, 2013.

NOTE: Percentages adjusted to exclude missing data.

RAND RR538-1

reported was typically unwanted sexual contact (77 percent; Rock, 2013).² In most cases, the perpetrator was known to the victim. Ninety percent of military women and 87 percent of military men who indicated that they were sexually assaulted knew the perpetrator (Rock, 2013). Most often, the perpetrator was a military coworker (52–57 percent of assaults), and it was also relatively common for the perpetrator to be in the victim's chain of command (25–27 percent of assaults; Rock, 2013).

The number of sexual assaults officially reported to military authorities was smaller than the total number of assaults estimated by the WGRA survey. Officially reported assaults have been increasing, however—from 3,158 in 2010 to 3,374 in 2012 and 3,553 just in the first three quarters of 2013 (SAPRO, 2011, 2013a, 2013c).

Although military sexual assault has received increased attention in recent years, the rates of reported sexual assault among female service members is similar to the rates reported among female civilians. DoD partnered with the Centers for Disease Control and Prevention (CDC) to add a random sample of active-duty women to the 2010 National Intimate Partner and Sexual Violence Survey (Black and Merrick, 2013). After adjusting for age and marital status, the proportion of women who reported being a victim of a sexual assault did not differ statistically across the civilian (40.3 percent) and military (36.3 percent) populations (Black and Merrick, 2013). Likewise, the proportion of civilian women who self-reported being sexually assaulted in the previous year (5.2 percent) was similar to that of military women (5.6 percent; Black and Merrick, 2013). The extent to which military men are at higher (or similar) risk of sexual assault victimization relative to civilian men was not studied and is currently unknown.

THE CONNECTION BETWEEN ALCOHOL MISUSE AND SEXUAL ASSAULT

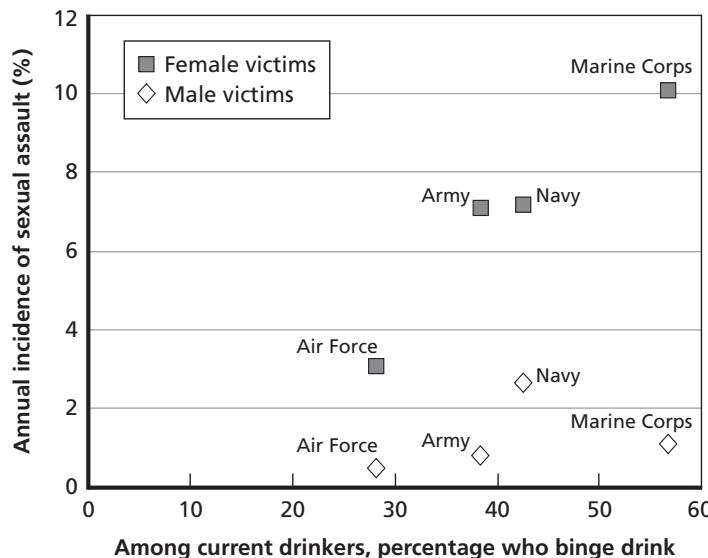
Prevalence of Alcohol Misuse and Alcohol-Involved Military Sexual Assaults

Alcohol misuse is the third leading cause of preventable death in the United States (CDC, 2014), and it contributes to numerous medical, psychological, and psychosocial problems (Cherpitel and Ye, 2008; Corrao et al. 2004; Schuckit, 2009). Binge

drinking³—defined by the National Institute on Alcohol Abuse and Alcoholism as consuming five or more drinks (men) or four or more drinks (women) within approximately two hours or on the same occasion (NIAAA, 2004)—is common among active-duty service members (Barlas et al., 2013). The 2011 DoD Survey on Health Related Behaviors revealed that one-third of active-duty service members reported drinking this heavily at least one time in the previous month (Barlas et al., 2013).⁴ As shown in Figure 2, among drinkers, Marine Corps members were significantly more likely to report binge drinking (56.7 percent) than Navy members (42.5 percent) who were significantly more likely to report binge drinking than Army members (38.4 percent) who were significantly more likely to report binge drinking than Air Force members (28.1 percent; Barlas et al., 2013). The reported prevalence of binge drinking increased in all the services during Operations Enduring Freedom and Iraqi Freedom (not shown in the figure): From 1998 to 2008, reports of binge drinking increased by 12 percent (Bray et al., 2009).

Weekly binge drinking—defined by Bray and colleagues (2009) as drinking five or more drinks on the same occasion at least weekly (no gender adjustment)—was also common among service members, with 20 percent reporting weekly binge drinking.⁵ This pattern of alcohol misuse is more common among men than women, and among enlisted service members and junior

Figure 2. Relationship Between Binge Drinking and Sexual Assault Among Service Members, by Service



SOURCES: Binge drinking rates from Barlas et al., 2013; annual sexual assault data from Rock, 2013.

officers relative to senior officers (Bray et al., 2009). Weekly binge drinking was also more commonly reported among younger service members: Twenty-six percent of service members ages 18–25 reported weekly binge drinking; this proportion declined to 18 percent for those ages 26–35 and 10 percent or lower among those older than 35 (Bray et al., 2009). For young service members, these numbers are higher than among their civilian counterparts (Bray et al., 2009).⁶ For example, 16 percent of civilians ages 18–25 (a high-risk age group for sexual assault; Tjaden and Thoennes, 2006) reported weekly binge drinking, compared with 26 percent of their active-duty peers.

Among service members who reported drinking heavily—defined as more than 14 drinks weekly for men or more than seven drinks weekly for women (Barlas et al., 2013)—the primary reasons for drinking were that they enjoy drinking (82 percent) and that it is a way to celebrate (73 percent) or be sociable (46 percent). Several military culture and environmental factors may increase the risk of heavy alcohol use among service members. Military norms may encourage heavy alcohol use and binge drinking as a means of recreation, as a “time out” from difficult work, or to improve camaraderie (Ames and Cunradi, 2004; Ames et al., 2009). Indeed, among heavy drinkers, 19 percent indicated that “drinking is part of being in my unit” (Barlas et al., 2013). In addition, alcoholic beverages are available at military installations at reduced prices (DoDI 1330.09), which is worth noting, given that lower alcohol pricing is associated with alcohol misuse (Wagenaar, Salois, and Komro, 2009) and that service members cite cost as the primary deterrent to alcohol use (Barlas et al., 2013). Finally, increased alcohol use is linked to deployment and combat exposure (Bray et al., 2009; Jacobson et al., 2008; Lande et al., 2008; Santiago et al., 2010; Spera, 2011), suggesting that alcohol may be used as a mechanism to cope with the stress associated with such exposure (Jacobson et al., 2008; Thomas et al., 2010).

Currently, the best source of data to examine the co-occurrence of alcohol use and military sexual violence is the WGRA. According to that survey, in 2012, nearly one-half (47 percent) of women and one-fifth (19 percent) of men who reported a military sexual assault indicated that either they or the perpetrator had been using alcohol prior to the assault (see Figure 1; Rock, 2013). The survey questions were not detailed enough to reveal the proportion of self-reported assaults involving perpetrator alcohol use only, victim use only, or both perpetrator and victim use. Moreover, it is not clear whether the reported alcohol use was moderate or heavy, or whether the assaults involved an incapacitated rape (that is, when a victim is

unconscious or substantially impaired due to alcohol intoxication). However, even without these contextual details, Figure 2 shows what appears to be an association between the estimated prevalence of binge drinking and sexual assault of military women across the service branches.

On the 2012 Service Academy Gender Relations Survey of cadets and midshipmen attending a military service academy, 10–15 percent of women and 1–3 percent of men indicated that they had been sexually assaulted within the previous year (Cook and Rock, 2012). Unlike the survey of active-duty service members, the service academy survey was structured to determine both victim and perpetrator alcohol use (as reported by the victim). The low rates of sexual assault among men prohibited the reporting these values among male victims, but among female victims, alcohol involvement was common (Cook and Rock, 2012). According to victims, perpetrator alcohol use was involved in 37–58 percent of assaults, and victims reported using alcohol in 30–44 percent of assaults (Cook and Rock, 2012).

In one of the few studies examining the intentional use of alcohol to facilitate an assault, among Navy recruits who admitted perpetrating an attempted or completed rape, 87 percent indicated that they had used drugs or alcohol to incapacitate the victim (McWhorter et al., 2009). Nonetheless, little is known about the etiology of alcohol-involved military sexual assaults. Given the limited military-specific evidence elucidating the mechanisms by which alcohol and sexual violence are linked, the review that follows focuses on well-established findings in the civilian literature that may provide some insight into similar processes that could be operating in a military population.

Co-Occurrence of Alcohol Use and Sexual Assault Among U.S. Civilians

In nationally representative civilian samples, 61–67 percent of self-reported sexual assault victims indicate that the perpetrator was using alcohol or drugs at the time of the assault (Brecklin and Ullman, 2002; Tjaden and Thoennes, 2006). Although victims were less likely to report that they had been drinking at the time of the assault, 20 percent indicated that they had used either alcohol or drugs prior to the assault (Brecklin and Ullman, 2002; Tjaden and Thoennes, 2006). Among college students, a high-risk group for sexual assault (Fisher et al., 1998), rates of alcohol or drug use at the time of the incident were also high for both perpetrators (44–71 percent) and victims (30–73 percent; Abbey et al., 1996; Testa and Hoffman, 2012;

Ullman, Karabatsos, and Koss, 1999; Zawacki et al., 2003). When alcohol was involved, it was often the case that both the perpetrator and the victim had consumed alcohol prior to the assault (Abbey, 2002; Harrell et al., 2009; Zawacki et al., 2003).

The Influence of Alcohol on the Risk of Sexual Assault Perpetration

Understanding the precise role that alcohol may play in sexual assault perpetration is necessary to guide prevention and intervention efforts. If alcohol and sexual assault are not causally related but simply influenced by the same third variable (e.g., general deviance, impulsivity, sensation seeking), then there is little reason to believe that changing alcohol use patterns will influence the rate of sexual assault. Instead, prevention efforts would be better served by focusing on the third variable. However, if there is evidence to suggest that alcohol use directly increases the likelihood of sexual assault perpetration—even if this is true only for a subset of individuals—then alcohol-related interventions may be a viable tool by which to reduce the incidence of sexual assault.

Given that alcohol use is associated with a variety of other factors that could increase the risk of violence, it can be difficult to determine whether alcohol-related violence in the natural environment is due to the direct effect of alcohol or a co-occurring event (e.g., peer pressure, relaxed social rules at bars and parties). Thus, researchers have turned to laboratory settings in an attempt to isolate the effects of alcohol as a contributing factor. Given clear ethical constraints that prohibit studies that would result in physical aggression and possible injury, most experiments rely on a variant of the Taylor aggression task to study the influence of alcohol on aggression (Taylor, 1993). In this task, participants compete by computer with an opponent and are allowed to shock their opponent whenever they win a trial. Unbeknownst to the experimental subject, the opponent “in the next room” is fictional. In general, people who consumed alcohol before completing the Taylor aggression task behaved more aggressively (selected more painful shocks and administered them for longer durations) than those who did not drink (Bushman and Cooper, 1990; Chermack and Giancola, 1997; Ito, Miller, and Pollock, 1996). The experimental rigor and replicability of these studies provides strong evidence that alcohol intoxication is causally related to increased aggression.

Laboratory research suggests that the people who are most susceptible to aggression after consuming alcohol are those who are more aggressive in general (i.e., outside the laboratory), have antisocial characteristics, and endorse more feelings of anger and hostility toward others (Bailey and Taylor, 1991; Parrott and Giancola, 2004). Responses to the task were also sensitive to the characteristics of the situation. For example, participants who received painful shocks from their opponents subsequently selected more painful shocks for that opponent (Bailey and Taylor, 1991; Ito, Miller, and Pollack, 1996).

The causal association between alcohol and laboratory aggression, particularly among those who are predisposed to aggression, provides indirect evidence that alcohol may also increase the risk of other forms of aggression, such as sexual violence. To study sexual aggression in a laboratory setting, most investigators have relied on men’s reactions to written or audio vignettes to better understand the effect of alcohol on subjects’ propensity to be sexually aggressive. In one paradigm, participants listen to an audiotape of a date that progresses from consensual sexual activity (kissing) to rape, in which the man continues to increase his advances despite escalating nonconsent responses from the woman (Bernat et al., 1997). Participants are instructed to indicate the point at which the man should stop his advances. In these studies, men who self-reported sexually assaulting someone in the past and who endorsed rape-supportive attitudes allowed the encounter to progress longer than other men (Bernat et al., 1997; Marx and Gross, 1995). Moderate alcohol intoxication increased the time it took to indicate that the encounter was inappropriate. Relative to men who consumed non-alcoholic beverages, men who consumed alcoholic beverages prior to listening to the audiotape believed that the encounter was appropriate for a longer duration (Gross et al., 2001; Marx, Gross and Adams, 1999). In response to a task that involved evaluating a written description of a date rape, men who had consumed alcohol were more likely than those who had not to indicate that they would behave like the man in the vignette if they were in a similar situation (Davis, 2010; Davis et al., 2012; Norris et al., 2002).

In addition to directly increasing the risk of aggression more generally, alcohol use may also change the way that individuals perceive a social situation, which may increase the risk of sexual aggression. There is a body of evidence to suggest that alcohol intoxication increases the risk that men will misperceive women’s sexual intent, which, in turn, is linked with sexual assault (Farris et al., 2008). Among college men, self-reported average alcohol use has been positively associated with the

frequency of sexual misperception, which predicts the number of self-reported sexual assaults (Abbey, McAuslan, and Ross, 1998). Abbey and colleagues (2001) reported that, compared with dates that were just “bad,” dates that ended in sexual violence were more likely to include the man misperceiving the sexual intent of the woman. Furthermore, dates that included misperception also involved more alcohol use.

Experiments investigating the relationship between alcohol use and sexual misperception have generally supported the correlational studies. Relative to men who consumed nonalcoholic beverages, men who consumed alcohol and subsequently interacted with an unacquainted woman in a laboratory setting perceived her as behaving in a more sexualized manner, and they remembered more of her positive cues and fewer of her negative cues (Abbey, Zawacki, and Buck, 2005; Abbey, Zawacki, and McAuslan, 2000). Men who did not consume alcohol clearly distinguished between women who behaved in an attentive manner from those who behaved inattentively, and they believed that the attentive women were more sexually interested in them than were non-attentive women. Men who consumed alcohol made no such distinction; the extent to which intoxicated men perceived a woman as sexually interested did not differ with her attentiveness, which may indicate that alcohol reduced their attention to important diagnostic cues about the presence (or absence) of sexual interest (Abbey, Zawacki, and McAuslan, 2000). In an experimental task in which men categorized a series of still images of same-aged women, men who were intoxicated had greater difficulty discriminating between friendly and sexually interested women than when they were not drinking. Furthermore, when a woman’s positive affect was ambiguous, men were more likely to assume she was indicating sexual interest if they had been drinking, relative to their performance when they were not drinking (Farris, Treat, and Viken, 2010).

In Summary: Perpetration Risk

Taken together, the research suggests that alcohol use is linked to sexual aggression (Testa, 2002). Controlled laboratory experiments demonstrate that alcohol intoxication is causally linked to general aggression and indicators of sexual aggression risk, such as misperception of a woman’s sexual intent and self-reported likelihood of sexual aggression. The literature suggests a stronger link between alcohol use and sexual aggression among individuals predisposed to behaving aggressively. The extent to which these findings can be generalized to a military

population is unknown, as most of the research has focused on college men. Still, the most common perpetrators of reported military sexual assaults are junior enlisted service members who generally match college students with respect to age and high school academic performance (SAPRO, 2013a). However, it is also possible that some young adults who chose a military career have a greater predisposition for aggression and hostility (Heyman and Neidig, 1999; Rosen and Martin, 1998). For example, anonymous studies of Navy recruits have shown a rate of sexual assault perpetration that is higher (15 percent) than that among this group’s civilian counterparts (6–8 percent; Stander et al., 2008; Ullman, Karabatsos, and Koss, 1999; White and Smith, 2004). Given that the influence of alcohol use on the risk of sexual violence is particularly pronounced among those with a higher predisposition for aggression (Bailey and Taylor, 1991; Parrott and Giancola, 2004), it is possible that the association between alcohol use and sexual assault perpetration is stronger among military service members than among civilian college students. Additional research will be necessary to clarify the role of alcohol use in predicting the risk of sexual aggression among service members.

The Influence of Alcohol on the Risk of Sexual Assault Victimization

The review that follows, drawn from the civilian literature, describes the relationship between alcohol use and the risk of sexual assault victimization among women. The focus on female victims in the civilian literature is likely due to the fact that the vast majority of civilian victims are women (Plantz et al., 2013; Tjaden and Thoennes, 2006). However, it is important to use caution when generalizing this literature to the military context because more than half of all military sexual assault victims are men (SAPRO, 2013b), and the risk factors for these assaults may be distinct from the risk factors for women. Importantly, alcohol use is less often involved in male military sexual assaults (19 percent) than in female sexual assaults (47 percent; Rock, 2013). Additional research will be necessary to describe the link between alcohol use and sexual assault among male victims.

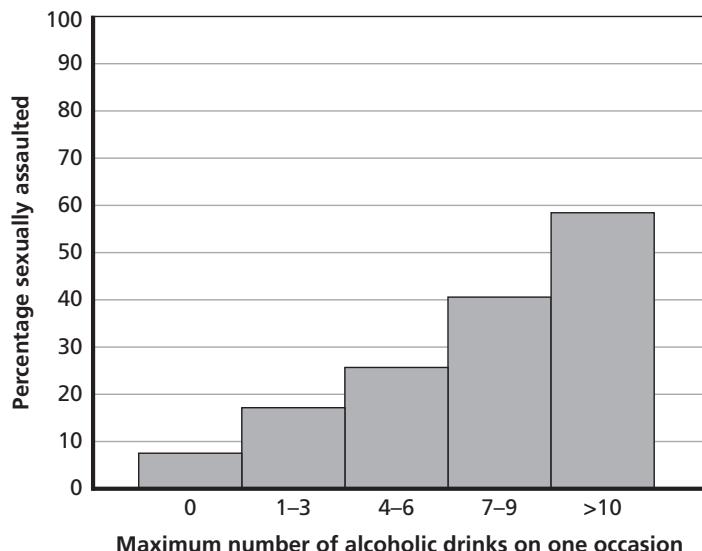
Women who have been the victim of a sexual assault tend to drink more often and more heavily than women who have never been victimized (Abbey et al., 1996; Champion et al., 2004; Larimer et al., 1999; McMullin and White, 2006; Mohler-Kuo et al., 2004). Although some of this association may be attributable to the use of alcohol to cope with trauma

symptoms following an assault (Stewart and Conrod, 2003), there is also evidence that alcohol and sexual assault co-occur. A significant proportion of sexual assault victims report that they were drinking prior to the assault (20–73 percent; Abbey, et al., 1996; Brecklin and Ullman, 2002; Testa and Hoffman, 2012; Tjaden and Thoennes, 2006; Ullman, Karabatsos, and Koss, 1999; Zawacki et al., 2003), and daily diary studies have shown that sexual assaults occur disproportionately on heavy drinking days relative to other days (Parks et al., 2008). In fact, on days during which four or more drinks were consumed, the odds of sexual victimization were 19.4 times higher than on a non-drinking day. It is worth noting that days on which women consumed alcohol but limited consumption to fewer than four drinks, there was no increased risk of sexual victimization (Parks et al., 2008).

Among college students, the likelihood of a first semester sexual assault (the highest risk period; Humphrey and White, 2000) is tightly associated with the maximum use of alcohol during the same period (Testa and Hoffman, 2012). Among alcohol abstainers, 8 percent were sexually assaulted during their first semester of college. During this same period, 26 percent of women whose maximum level of drinking was four to six drinks were sexually assaulted, and nearly 60 percent of women whose maximum level of drinking was ten or more drinks were sexually assaulted, as shown in Figure 3 (Testa and Hoffman, 2012). Using a sample drawn from a single large university, Neal and Fromme (2007) reported that heavier alcohol use days increased the associated risk of being “coerced into some form of sexual activity.”

Prospective longitudinal studies of alcohol use and sexual violence have produced mixed findings. Although some researchers have shown that alcohol use at an initial time point predicted the likelihood that women would report a sexual assault at a future time point (Combs-Lane and Smith, 2002; Greene and Navarro, 1998), a number of high-quality studies with large samples have failed to confirm this relationship (Acierno et al., 1999; Martino, Collins, and Ellickson, 2004). Some of these mixed findings could be explained by the possibility that alcohol increases the risk of some types of assaults but not others (Testa and Livingston, 2009). For example, alcohol use—particularly binge drinking—may increase women’s risk of being the victim of an incapacitated rape but may not increase the risk of other types of assaults, such as assaults perpetrated using physical force (Mohler-Kuo et al., 2004; Testa, VanZile-Tamsen, and Livingston, 2007).

Figure 3. Relationship Between Maximum Drinking Level and the Probability of Sexual Assault Among Women in Their First Semester of College



SOURCE: Data from Testa and Hoffman, 2012.

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There is also intriguing evidence from natural differences in alcohol use across the population that suggests a link between alcohol and sexual violence risk. For example, women attending a historically black college or university (HBCU) have a substantially lower risk of sexual assault than women attending non-HBCUs (Krebs et al., 2011). The difference in sexual assault incidence at these two types of campuses is explained statistically by the lower frequency of alcohol use among women attending HBCUs (Krebs et al., 2011). A finding in the opposite direction supports a similar conclusion. Among university students, women who are members of a sorority are at a higher risk of sexual assault than are non-sorority members, and some of this risk can be accounted for statistically by women’s average alcohol consumption (Minow and Einolf, 2009). Finally, among college women who engage in binge drinking, those who have reported taking “harm reduction” steps to ensure safe drinking (e.g., counting drinks, eating prior to drinking, leaving drinking events with a friend) were less likely than other heavy drinkers to report negative sexual experiences, such as unprotected sex or unwanted sex (Lewis et al., 2010). In sum, natural variation in women’s alcohol use and protective alcohol use behaviors provides encouraging support for the hypothesis that an intervention to either prevent alcohol use or to promote responsible alcohol use could subsequently reduce the incidence of sexual assault.

It is also possible that some of the risk conferred by alcohol may have little to do with the pharmacological effects of alcohol and more to do with the settings in which women drink. Young women who drink almost always do so in social settings, such as parties and bars (Knibbe, 1998; Single and Whortley, 1993; Vogler et al., 1994). These settings usually include men who are also drinking, which, as discussed earlier, may increase men's risk of sexual assault perpetration. In fact, studies that have accounted for the frequency with which women are exposed to risky drinking settings (e.g., bars, drinking games) have found that exposure to these settings predicts victimization better than women's actual alcohol consumption (Johnson, Wendel, and Hamilton, 1998; Parks and Miller, 1997; Schwartz and Pitts, 1995). These findings have led prominent sexual assault researchers to conclude that, while there continues to be a "role for women's actual alcohol consumption as a risk factor for sexual victimization, . . . it is drinking within risky contexts that is the key risk factor for sexual victimization" (Testa and Livingston, 2009).

One direct effect of alcohol use is general alcohol-related impairment in cognitive functioning (Giancola, 2000), including impairment in risk perception (Norris, Nurius, and Dimeff, 1996). Alcohol intoxication may focus attention on the positive and impelling cues associated with a social situation and reduce attention to less salient sexual risk cues (Steele and Josephs, 1990). Several studies have examined the relationship between alcohol use and women's judgment of risk in written dating vignettes (e.g., an intoxicated acquaintance arrives at her apartment late at night). Testa, Livingston, and Collins (2000) found that, relative to women who were not drinking, intoxicated women were more likely to feel positively about the male character, believe that the encounter will end positively, and indicate that they would engage in risky behavior in a similar situation (e.g., invite an intoxicated acquaintance into the apartment). In a similar study conducted by Davis and colleagues (2009), relative to women who were not drinking, intoxicated women were equally perceptive of clear risk cues (e.g., continued unwanted sexual advances) but were less likely to notice subtle risk cues (e.g., isolation from others). This is notable, given that lesser risk cues often occur early enough in an interaction to allow women to change the course of the encounter, whereas resisting and ending an attack that has already begun is far more difficult.

In a study that recruited drinking women from a bar environment, researchers studied women's responses to a vignette that described an attractive dating partner who engaged in

unwanted sexual contact (breast fondling, forceful kissing; Testa et al., 2006). Women with a blood alcohol concentration (BAC) greater than 0.06% (approximately three drinks for an average-sized woman; Wisconsin Department of Transportation, 2014) perceived the scenario as less risky than women who were drinking more moderately (BAC < 0.06%). Importantly, compared with moderate drinkers, women with a BAC greater than 0.06% indicated that if they were in a similar situation, they would be more likely to respond passively ("just see what happens") and less likely to resist either politely ("make an excuse as to why I don't want to have sex") or directly ("tell him clearly and directly that I want him to stop"). Other research has shown that men are less likely to end their sexual advances when women communicate nonconsent politely than when they communicate nonconsent directly (Muehlenhard, Andrews, and Beal, 1996).

With respect to sexual assault risk and alcohol use, it is extremely important to note that the substantial majority of alcohol-involved sexual assaults are incapacitated rapes in which the woman was either unconscious or conscious but unable to resist verbally or physically (McCauley et al., 2009; Mohler-Kuo et al., 2004). Thus, alcohol-related deficits in risk perception could play an important role in predicting sexual assaults in only a small proportion of cases (assaults that are alcohol-involved but in which the victim is not incapacitated).

Finally, women's alcohol use may be tied to the risk of sexual assault not due to the direct effect of alcohol on women's perception or behavior but, rather, the way that alcohol use changes others' perceptions of women. Across multiple controlled studies, study subjects view a woman who is drinking an alcoholic beverage as more sexually interested, sexually

One direct effect of alcohol use is general alcohol-related impairment of cognitive functioning, including impairment in risk perception.

disinhibited, and sexually available than an identical woman portrayed drinking a nonalcoholic beverage (Corcoran and Thomas, 1991; DeSouza et al., 1992; Garcia and Kushnir, 1987; George, Gournic, and McAfee, 1988). However, this effect is not universal. Men who have strong beliefs that alcohol use increases sexuality perceive a drinking woman as more sexually available than an identical woman depicted with a nonalcoholic beverage (George et al., 1995). Men who generally reject the notion that alcohol use and sexual intention are linked are unlikely to change their perception of a woman's sexuality when she drinks rather than abstains (George et al., 1995). Relying on women's alcohol use to infer her sexual interest may increase the likelihood of misperceiving her true (lack of) interest, which, as discussed earlier, has been associated with sexual perpetration.

In Summary: Victimization Risk

Because sexual assault victimization occurs as a result of someone else's actions rather than something the victim does, there can be no causal relationship between alcohol use and sexual victimization. Instead, alcohol use increases vulnerability if and only if it occurs in a setting with a nearby potential perpetrator. When these conditions are present, alcohol use may increase vulnerability to that potential perpetrator via a variety of mechanisms. At high doses of alcohol, users may be incapacitated or even unconscious and, thus, may have no means by which to resist or avoid an assault. At lower doses, alcohol use may reduce attention to risk indicators and thereby decrease the likelihood that the user will exit a risky encounter while escape is still possible. Finally, individuals observing someone drinking alcohol attribute more sexual intentions to that person than they would to someone who is not drinking alcohol, and this social misperception increases the risk of offending.

Binge drinking appears to be a particularly potent predictor of sexual victimization and therefore may be an important target for prevention in both civilian and military contexts. Although drinking to intoxication poses no risk of sexual assault if a potential perpetrator is not present, the high prevalence of sexual assault offending among young adults suggests that most moderately sized social gatherings will include at least one potential perpetrator (Ullman, Karabatsos, and Koss, 1999; White and Smith, 2004).

The extent to which findings from the civilian literature are applicable to the military context is unclear, as there are differences in populations and cultural context. The civilian

literature focuses almost entirely on female victims. It would be unwise to generalize this work to make inferences about military men's risk of victimization. Generalizing to military women could be more appropriate if and when alcohol use is similar for both groups of women (e.g., in nonwork, social situations), but unique features of the military system must always be considered. An expanded research agenda to examine the unique relationships between alcohol and sexual victimization in military populations is urgently needed.

PREVENTING SEXUAL ASSAULT BY TARGETING ALCOHOL MISUSE

Since SAPRO was created in 2005, DoD has invested considerable resources in implementing universal sexual assault prevention programs and social media campaigns to improve the response to sexual assault. Efforts to evaluate these programs are under way (SAPRO, 2013a), but to date, little is known about their effectiveness. Estimates of the number of sexual assaults in 2012 suggest little improvement over the past decade (SAPRO, 2013a).⁷ However, it is possible that some local areas with effective prevention efforts have seen a subsequent decline in sexual assault. In the interim, some insight can be gleaned from program evaluations of sexual assault prevention efforts with civilian populations. Again, university settings provide a useful comparison, as the high density of young adults partially matches the demographic profile of the junior enlisted personnel who are at highest risk of sexual assault within their respective adult population (Rock, 2013).

In 1992, an amendment to the Campus Security Act required that all colleges and universities receiving federal funding implement a sexual assault prevention program. Given this requirement, prevention programs have been implemented almost universally in higher education settings. These programs are typically educational in format. They are delivered in small group settings, and a moderator provides definitions of sexual consent and sexual assault, information about reporting procedures, and possible criminal and campus disciplinary actions. Some curricula also include activities designed to increase empathy for sexual assault victims and to dispel myths and rape-supportive attitudes (e.g., rape is trivial, victims rather than perpetrators are responsible for victimization). In a 2005 meta-analysis of all studies evaluating the outcomes of rape prevention programs, Anderson and Whiston (2005) reported disappointingly small effects of these prevention programs in

terms of sexual violence rates. Although these programs have been somewhat successful in reducing rape-supportive attitudes, longitudinal research shows that these attitude improvements are transient and revert to pre-program levels within months of program completion (Brecklin and Forde, 2001; Davis and Liddell, 2002).

Given congressional mandates that rape prevention programs be implemented, many campuses continue to offer these educational sessions despite indications of limited utility. Others have begun to invest in novel and innovative approaches. One example is Bystander Intervention, a training program designed to encourage peers to intervene safely to prevent a potential assault from occurring (e.g., speaking up when a friend tries to lead an intoxicated woman away from a party; Banyard, Plante, and Moynihan, 2004). It will be important to continue evaluating these novel approaches to determine their effectiveness in preventing sexual assaults in groups exposed to the intervention. Given the disappointing results of efforts designed to directly reduce sexual violence, some researchers have turned to the link between alcohol and sexual violence, suggesting that reducing alcohol misuse may be a strategy by which to also reduce the incidence of sexual assault (Testa and Livingston, 2009). As discussed earlier, evidence from correlational, event-level, and experimental studies confirms a link between alcohol and sexual violence. Perhaps intervening to reduce alcohol misuse could lead to reductions in sexual violence as well.

Brief Interventions to Reduce Alcohol Misuse

Screening for alcohol misuse followed by brief behavioral counseling for patients who screen positive has been effective in reducing drinks per week (3.6 fewer drinks on average) and heavy drinking episodes among adults (12 percent of adults reported fewer episodes), and it has also demonstrated effectiveness specifically among young adults and college students (Jonas et al., 2012). In addition to reductions in drinking, brief behavioral counseling has been shown to reduce hospitalizations, emergency department visits, and alcohol-related mortality (Kristenson et al., 2002; Jonas et al., 2002). Screening and brief intervention is recommended by the U.S. Preventive Services Task Force for adults in primary care and has been ranked as the third most important preventive service for adults (U.S. Preventative Services Task Force, 2004).

Brief intervention includes personalized feedback about the individual's drinking (e.g., risks, consequences, comparing

drinking levels with U.S. norms), advice to drink less or abstain from drinking, a discussion of goals, and a follow-up session. Brief intervention is delivered by a health care professional and typically takes five to 15 minutes. Multicontact brief interventions have been associated with increased effectiveness over single-contact brief interventions (Jonas et al., 2012).

Motivational interviewing, a related intervention, has also been shown to be effective in reducing alcohol use and alcohol-related consequences (Dimeff et al., 1999; Larimer and Cronce, 2002, 2007). Motivational interviewing is designed to increase an individual's intrinsic desire to change his or her drinking behavior (Miller and Rollnick, 2002). While brief intervention draws on principles of motivational interviewing (e.g., reflective listening, empathy, respecting patient autonomy), brief intervention is typically shorter and requires less practitioner training.

In addition, a recent review has suggested that online interventions can also be effective in reducing alcohol misuse among young adults and may provide a mechanism for population-based interventions (as opposed to delivery only to primary care patients; Hustad et al., 2010; White et al., 2010). There is also evidence to support brief cognitive behavioral training programs, which teach skills to moderate alcohol use and to reduce the risk of excessive use in risky settings (Baer et al., 1992; Fromme et al., 1994; Kivlahan et al., 1990). In contrast, there is no evidence to support the effectiveness of educational courses designed to provide information about alcohol and alcohol-related consequences in reducing or preventing alcohol use (Larimer and Cronce, 2002, 2007).

Alcohol interventions for college students can be implemented indirectly by training parents to deliver the messaging. For example, studies of parent-based interventions have shown that providing alcohol education materials to the parents of incoming college students increased parent-student communication about safe alcohol use and sustained parental monitoring during college (Turrisi et al., 2001). Importantly, these increases in parental communication and monitoring subsequently decreased binge drinking and alcohol-related consequences for their adult children transitioning to college (Turrisi et al., 2001). The timing of this success is particularly important, given that the first year of college is the highest-risk period for negative alcohol consequences, such as incapacitated rape (Humphrey and White, 2000), and that university-implemented alcohol prevention programs may not reach all students early in their first semester.

Brief Alcohol Interventions to Reduce Sexual Assault?

Noting this success, Testa and colleagues hypothesized that a sustained parenting intervention delivered during the summer prior to college matriculation would not only reduce students' binge drinking during their first year of college, but it would also reduce the likelihood of incapacitated rape during this same period (Testa et al., 2010). Mothers of a representative sample of Erie County, New York, female high school seniors planning to attend college were invited to participate in the intervention. The simple intervention consisted of a mailed handbook containing information for parents about college drinking, effective parent-child communication strategies, and the importance of continued parental monitoring during college. Compared with a control group of mother-daughter dyads who did not receive the handbook, the daughters of mothers who received the handbook were less likely to be raped while incapacitated due to alcohol during their freshman year (8.0 percent) relative to the daughters of mothers who did not receive the handbook (12.1 percent; Testa et al., 2010).

The researchers also tested the effect of including an additional module on sexual assertiveness. For some of the mothers who received the alcohol communication handbook, the handbook included an additional chapter about college dating risks, sexual assertiveness strategies, and partner selectivity. Mothers were encouraged to discuss these dating topics with their daughters in addition to the alcohol topics. Interestingly, this additional training component, which the researchers expected would bolster the effect of the intervention and further reduce sexual victimization during daughters' first year of college, was

unrelated to sexual victimization. There was no further reduction in sexual victimization risk among these daughters relative to those who received the alcohol-only intervention (Testa et al., 2010).

Strategies to reduce alcohol use represent a promising but understudied approach to reducing sexual victimization and perpetration among young adults. Testa and colleagues (2010) provide early evidence that alcohol-only interventions for women may subsequently prevent incapacitated rapes. This innovative work requires replication and extension to determine whether a similar approach to reducing men's alcohol misuse may have a similar effect on rates of sexual violence perpetration and victimization among men.

Other promising approaches to reducing alcohol-involved sexual assaults include environmental strategies that reduce alcohol misuse. For example, research shows that decreasing alcohol availability—by reducing alcohol outlet density, limiting the operating hours of alcohol outlets, or increasing alcohol prices—decreases the rate of violent crime in the surrounding community (Martineau et al., 2013; Popova et al., 2009; Schofield and Denson, 2013; Wagenaar, Tobler, and Komro, 2010). In a survey of active-duty service members, the most frequently endorsed deterrent to drinking was the cost of alcohol (Barlas et al., 2013). The Task Force of the National Advisory Council on Alcohol Abuse and Alcoholism (2002) has also recommended increased enforcement of minimum drinking laws, limiting alcohol outlet density within communities, and responsible beverage service policies (e.g., eliminating last-call announcements, slowing alcohol service) as strategies that have been successful in reducing alcohol misuse and alcohol-related problems.

Given ongoing concern about alcohol misuse and alcohol-related consequences (including sexual assault), there is an opportunity to target approaches that successfully reduce alcohol misuse. Such approaches have the immediate benefit of limiting other alcohol-related consequences, such as driving under the influence and general aggression, but they could also yield an extra benefit of reducing sexual violence. Potential strategies to engage young service members could include (1) interactive sessions to practice drink refusal skills in challenging situations (e.g., a superior buys a service member another round); (2) personalized approaches to teach inexperienced drinkers how alcohol consumption relates to their expected blood alcohol levels, which could be used to discourage male-female drink matching; and (3) policy changes targeting binge drinking (e.g., prohibiting drinking games,

Strategies to reduce alcohol use represent a promising but understudied approach to reducing sexual victimization and perpetration among young adults.

increasing alcohol prices). Alcohol reduction programs should be implemented on a small scale to first assess the quality of the program and its impact on outcomes of interest. If a program shows initial promise, funders may then consider additional support to test generalizability elsewhere and eventually disseminate the program widely (Martin et al., 2012). This type of phased approach may help reduce the risk of widely disseminating programs that offer limited utility (as exemplified by university rape prevention programming). One important caveat is that, without additional research, we do not know whether the link between alcohol misuse and sexual violence is as strong in the military as it is in the civilian population. If this link is weak, then interventions to break it may have a limited effect on the rate of sexual violence.

whether the role of alcohol in alcohol-involved military sexual assaults differs by victim gender.

Develop and evaluate interventions that target alcohol misuse as a strategy by which to prevent military sexual assaults

Civilian research suggests that prevention programs focused on reducing alcohol misuse also reduce the incidence of sexual assault. It is plausible that such a link may be true for military sexual assaults as well. We recommend that alcohol misuse prevention programs—potentially adapted from programs demonstrated to be effective in civilian populations—be developed for military populations and subsequently evaluated. It will be important to determine whether reductions in binge drinking replicate the civilian findings, which have showed a parallel reduction in sexual victimization among women. Because the influence of reductions in binge drinking on sexual violence perpetration and on men's sexual victimization has not yet been tested, any DoD program that conducted such an evaluation would provide valuable insight not only for DoD but also more broadly for all sexual assault prevention programs. We note that other sexual assault prevention programs, such as Bystander Intervention (Banyard, Plante, and Moynihan, 2004), consider the role of alcohol and have shown some promise as well (Banyard, Moynihan, and Plante, 2007; Gidycz, Orchowski, and Berkowitz, 2011).

To conduct valid effectiveness trials, it will be important for decisionmakers to first implement novel programs at a selected number of bases rather than service-wide. Although policy considerations may pressure decisionmakers to roll out programs universally, such an approach would preclude an evaluation of effectiveness, as no appropriate comparison group will remain by which to benchmark the effect of the program on the incidence of sexual assault.

Given the role that alcohol misuse—and particularly binge drinking—may play in increasing risk of sexual assaults and a myriad of other consequences, it is essential to identify alcohol misuse early. The U.S. Preventive Services Task Force recommends routine screening and brief interventions for alcohol misuse, typically conducted in primary care settings. Screening should be conducted using a validated measure, such as the Alcohol Use Disorders Identification Test (AUDIT; Babor and Grant, 1989), AUDIT-C (Bradley et al., 2007), or a single question assessing binge drinking (Polen et al., 2008). A positive screen should be followed by brief behavioral counseling, which

DIRECTIONS FOR FUTURE RESEARCH AND INTERVENTION DEVELOPMENT

On the basis of this review, we recommend several avenues for additional research and analysis that would provide the necessary information to best direct DoD's sexual assault prevention strategy as it relates to alcohol misuse.

Determine the characteristics of alcohol-involved military sexual assaults and the role that alcohol plays in military sexual assault perpetration and victimization

Many questions remain regarding the characteristics of alcohol-involved military sexual assaults. For example, the civilian literature suggests that the first year of college is the highest risk period for sexual assaults and that binge drinking is a particularly risky pattern of alcohol use among college students. Available data on military sexual assaults reveal only whether alcohol was involved and do not provide the detail necessary to determine who was using alcohol, the amount of alcohol consumed, or the role of alcohol in the assault. Anonymous surveys could be used to identify periods and use patterns associated with high sexual assault risk in the military and to understand the role that alcohol played. Future research should document alcohol use by the perpetrator and the victim separately, the amount of alcohol used, the relationship between the perpetrator and the victim, and whether the assault was an incapacitated rape. Although alcohol use is less often implicated in assaults of male victims, further study is necessary to determine

typically includes normative feedback about the individual's current level of drinking relative to peers and advice to drink less (Saitz, 2013). Screening and brief intervention have demonstrated positive outcomes, including reductions in weekly drinking and long-term adherence to recommended drinking limits (Jonas et al., 2012), and these positive outcomes may be reason enough to implement this program. It remains unclear whether improved drinking outcomes would also be joined by a reduction in other adverse outcomes, such as sexual assaults. Evaluations of the impact of screening and brief intervention in military populations could identify whether there is an additional impact beyond a reduction in drinking. The civilian literature suggests that the first year of college is a particularly high-risk period for sexual assaults. If this pattern is observed among service members (i.e., technical training and early service), then screening and brief intervention may not occur early enough and may need to be combined with population-level prevention programs.

NOTES

¹The civilian comparison data were standardized to the sociodemographic distribution of service members by gender, age, education, race/ethnicity, and marital status.

²Percentages adjusted to exclude missing data.

³Also referred to as "heavy episodic drinking."

⁴The 2011 DoD Survey on Health Related Behaviors used a sampling frame of all nondeployed, active-duty service members to draw a stratified random sample for an anonymous survey of health behaviors, including alcohol use. Survey results are based on a total of 39,877 service members who responded. Given the low response rate (22 percent) and evidence of nonresponse bias, post-stratification weights were used to adjust for nonresponse to estimate a representative sample of service members.

⁵Bray and colleagues (2009) used the phrase "heavy alcohol use," but we use "weekly binge drinking" because the definition of heavy alcohol use has changed in recent fieldings of the survey.

⁶The civilian comparison data were standardized to the sociodemographic distribution of service members by gender, age, education, race/ethnicity, and marital status.

⁷One might suggest that estimated military sexual assault rates are increasing due to increased DoD attention, prevention training, and efforts to encourage victims to report these crimes. That is, training may increase the likelihood of reporting, which, in turn, causes the annual incidence rate to appear to rise. The 2006–2012 WGRA results do not appear to support the hypothesis that annual sexual assault incidence and sexual assault training would trend together. Rather, the percentage of service members who reported receiving sexual assault training in the previous 12 months increased steadily across the FY 2006, 2010, and 2012 surveys (from 89 percent to 96–97 percent), while the annual incidence of sexual assault against military women dropped sharply in 2010 (from 6.8 to 4.4 percent) only to rise dramatically in 2012 (from 4.4 to 6.1 percent; Lipari et al., 2008; Rock, 2013; Rock et al., 2011).

CONCLUSION

Secretary of Defense Chuck Hagel has called military sexual assault "a stain on the honor of our men and women who honorably serve our country, as well as a threat to the discipline and the cohesion of our force." DoD has invested considerable effort and resources in reducing the incidence of military sexual assault, but as with any large undertaking, there is more to be done. SAPRO has implemented a variety of sexual assault prevention programs DoD-wide, many of which include content on the link between alcohol use and sexual assault. In addition to continued efforts to evaluate these direct sexual assault prevention programs, we recommend that DoD invest in research on alcohol misuse prevention programming as a strategy by which to also prevent military sexual assaults.

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